

The following sections indicate the minimum system requirements for Web-based MAP usage, effective July 22, 2013.

Student Testing Requirements

Platform	Operating System	Browser	Other
Windows® PC	Windows XP® with Service Pack 3 (32-bit) or Service Pack 2 (64-bit), Windows Vista®, or Windows 7	MAP lockdown browser for PC, version 5.0	.NET Framework 3.5 or higher (included with lockdown browser installation if not on computer)
Macintosh®	Mac OS® X v10.5, v10.6, or v10.7, or v10.8	MAP lockdown browser for Mac	Safari® 5 or higher
iPad® 2	iOS 6 Note: MAP testing only—MAP for Primary Grades not supported at this time	Safari® 6 or higher	Use Guided Access feature to secure testing*
Chromebook™	Google Chrome OS	Chrome™ 23 or higher	Use Chrome Administrative Management Console to secure testing*

Other requirements: Headphones for MAP for Primary Grades testing.

*For details on these security features, see the *System Administration Guide* (to be updated in July).

Administration and Reporting Requirements

Platform	Operating System	Internet Explorer	Safari	Firefox	Chrome
Windows® PC	Windows XP® with Service Pack 3 (32-bit) or Service Pack 2 (64-bit), Windows Vista®, or Windows 7	8, 9, or 10		19 or higher	23 or higher
Macintosh®	Mac OS® X v10.5, v10.6, or v10.7, or v10.8		5, 5.1, or 6	19 or higher	23 or higher
Chromebook™	Google Chrome OS				23 or higher

Other requirements: PDF viewer, such as Adobe Reader®. Also, follow specific browser settings, such as allowing cookies and pop-ups for the MAP URL; see the *System Administration Guide*.

Hardware Specifications

Computer hardware must meet the minimum requirements specified by the manufacturers of the operating system and browser in use. The use of hardware that exceeds the minimum requirement may improve testing and MAP user experience. The resources required to run Web-based MAP are similar to other Web-based applications.

For computer display, follow these specifications:

- Screen Resolution: 1024 x 768 or more
- Color Depth: 32-bit recommended (minimum 16-bit)

Network Bandwidth

The following bandwidth recommendations provide guidance for MAP testing and are based on best estimate calculations. Test sites that do not meet these recommendations will be able to deliver assessments, but may experience latency in data delivery.

- MAP testing — **2 Mbps** for every 30 computers concurrently testing
- MAP for Primary Grades testing — **3 Mbps** for every 30 computers concurrently testing
- **Note:** More bandwidth required because of audio and interactive features
- Notify all computer users to avoid bandwidth-intensive activities during testing
- Look for limitation points in your internal network (such as school-to-district connections when the district has the main Internet connection)

Note: Additional bandwidth is needed at the beginning of each test to load the initial test questions and the question display software into cache in each computer's browser. The initial load is approximately 2.2 MB, and the load time varies based on available bandwidth.

To perform an Internet speed test, use a Web site such as www.speedtest.net and select Portland, Oregon as the location. Perform the test multiple times from each location where testing will take place, such as each school building. Test the speed at different times during the school day to understand the variations in bandwidth availability based on staff and student usage. Record the download speeds and use them to approximate your available bandwidth during testing.